

539,413

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
15 July 2004 (15.07.2004)

PCT

(10) International Publication Number
WO 2004/059529 A2

(51) International Patent Classification⁷: **G06F 17/30**

Derrick, Diarmuid [GB/GB]; 97D The Thorighfare, Woodbridge, Suffolk IP12 1AS (GB). MCKEE, Paul, Francis [GB/GB]; 2 Celandine Court, Braiswick, Colchester, Essex CO4 5UQ (GB).

(21) International Application Number:
PCT/GB2003/005396

(22) International Filing Date:
11 December 2003 (11.12.2003)

(74) Agent: WILLIAMSON, Simeon, Paul; BT Group Legal, Intellectual Property Department, PP C5A, BT Centre, 81 Newgate Street, London EC1A 7AJ (GB).

(25) Filing Language: English

(81) Designated States (*national*): CA, US.

(26) Publication Language: English

(84) Designated States (*regional*): European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR).

(30) Priority Data:
0230331.1 31 December 2002 (31.12.2002) GB

(71) Applicant (*for all designated States except US*): **BRITISH TELECOMMUNICATIONS PUBLIC LIMITED COMPANY** [GB/GB]; 81 Newgate Street, London EC1A 7AJ (GB).

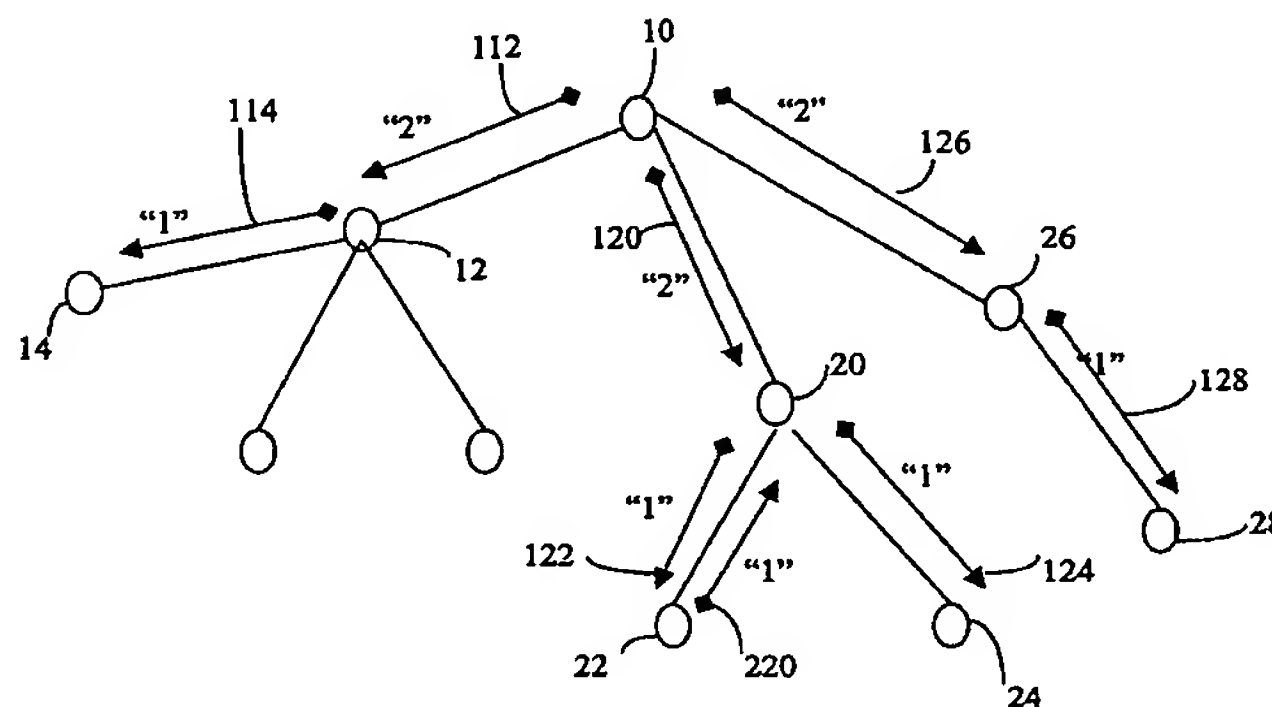
Published:
— *without international search report and to be republished upon receipt of that report*

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **ROBERTSON,**

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD AND APPARATUS FOR OPERATING A COMPUTER NETWORK



(57) Abstract: The discovery process comprises the device (10) generating messages (112, 120 126) which together have the purpose of identifying a predetermined number of devices which satisfy a test condition included in each message. These messages are sent respectively to the on-line devices (12, 20, 26) neighbouring device (10). To ensure that no more devices than necessary are identified by the messages, each message includes a variable which is referred to as a token bucket which indicates the number of devices to be discovered by the message. Additionally, each message includes a unique identifier. When a device (12, 20 26) receives a discovery message sent from another device, it determines if it satisfies the test condition and if so it sends an acceptance message to the originating device, decrements the token bucket in the message and forwards on any remaining tokens to another neighbour. The process stops once all tokens have been disposed of in this way. If a message reaches the end of a path without disposing of all of the tokens, the message is returned back up the path to try different paths until eventually all paths have been tried or a restriction criterion (eg maximum permitted number of hops) is met whereupon the message is returned back as a failed message to the originating device.

WO 2004/059529 A2